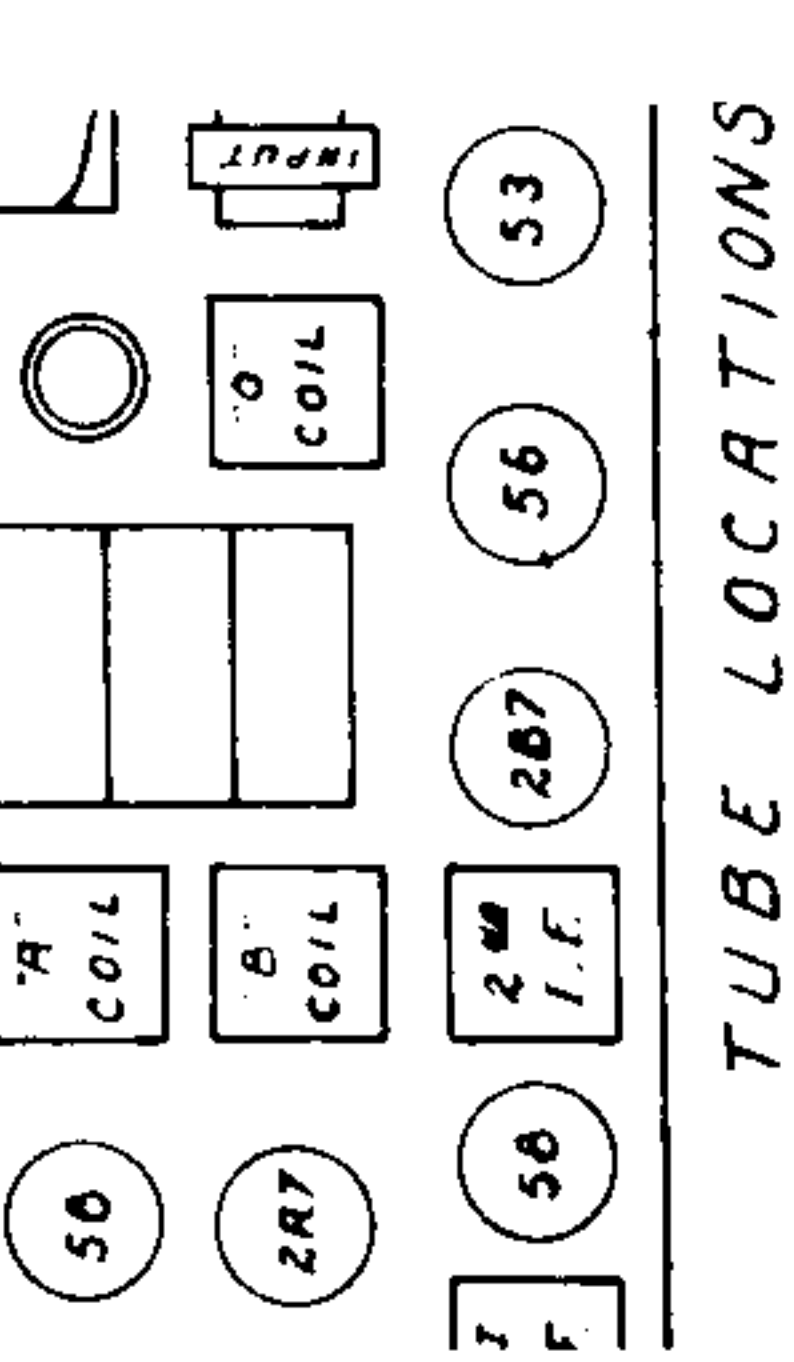
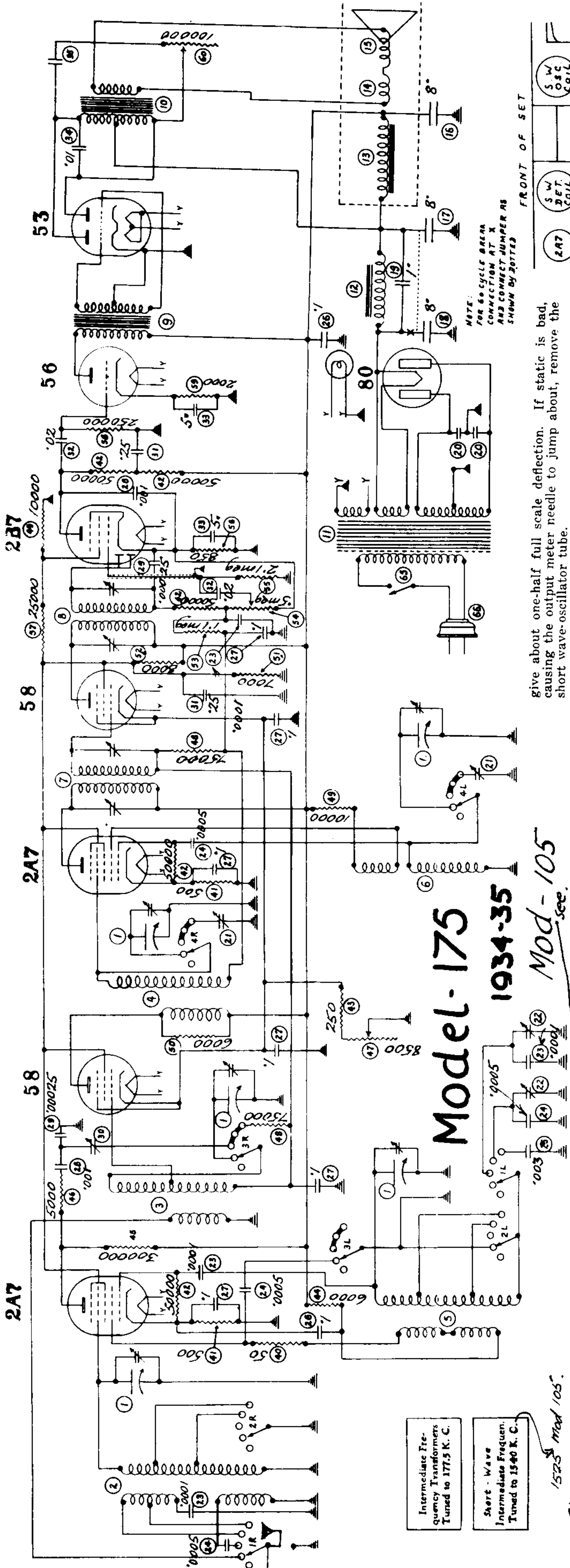


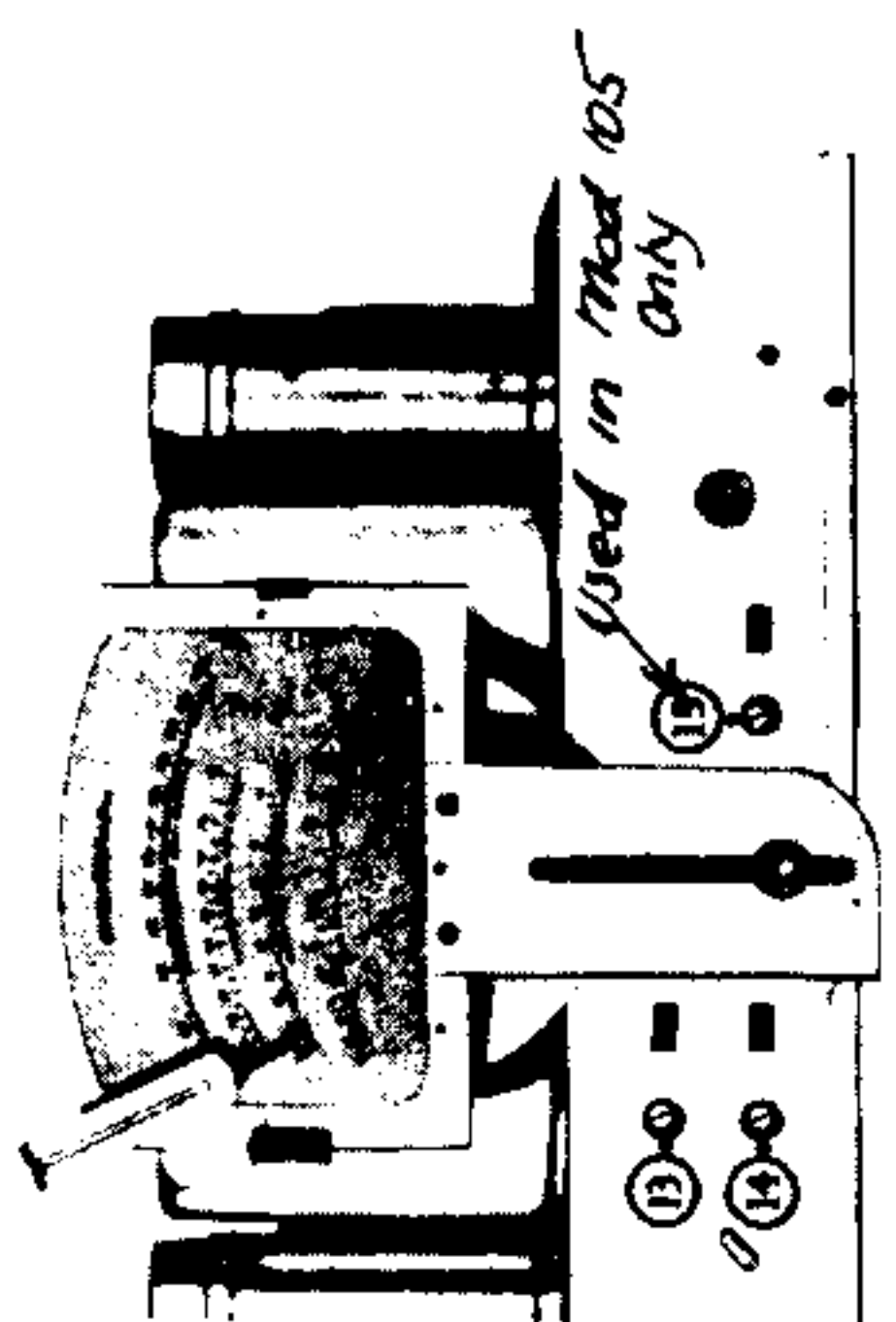


Stewart-Warner Corp.

	Model: R-105	Chassis:	Year:
	Power:	Circuit:	IF:
	Tubes:		
	Bands:		
Resources			
RCC STEWART WARNER 18			



TYPE OF TUBES	PLATE	GRID	SCREEN	CATHODE
2A7	190	250	95	4-5
58	245	95	4	
2A7	245	95	4-5	
58	245	95	4	
2B7	215	30	.75	
56	230			
53	300			



give about one-half full scale deflection. If static is bad, causing the output meter needle to jump about, remove the short wave-oscillator tube.

Using a Bakelite screwdriver, adjust trimmers Nos. 10, 11 and 12 to give maximum output.

NOTE: It should never be necessary to adjust the following short wave circuits unless the short wave trimmers or coils have been changed or tampered with. Alignment procedure as a rule should not go beyond this point.

(4) ALIGNING 180-80 METERS SHORT WAVE BAND

The following alignment procedure is extremely critical. Tune the receiver to exactly 800 K.C. and adjust the output frequency of the test oscillator until its signal is a maximum at this frequency. Shift to the first short wave band of the set, and turn the pointer as far as it will go to the left. This tunes the set to 1600 K.C., which is the second harmonic of the test oscillator signal. Adjust trimmer No. 14 until this signal comes thru with maximum output.

Again using the calibrated broadcast band, set the test oscillator output to exactly 975 K.C., shift back to the first short wave band, and turn the pointer as far as it will go to the right. Adjust trimmer No. 5 until the oscillator signal (4th harmonic of 975 K.C.) is picked up with maximum output. If it has been necessary to change the adjustment of trimmer No. 5 appreciably, go back to trimmer No. 14 and adjust it again as outlined at the beginning of this section. This second readjustment is important.

(5) ALIGNING 80-33 METERS SHORT WAVE BAND

Set the test oscillator to exactly 925 K.C. using the method previously outlined for 800 K.C. and 975 K.C. Shift the tuning range of the set to the second short wave band (80-33 meters) and turn the pointer as far as it will go to the left. Adjust trimmer No. 13 until the fourth harmonic of the 925 K.C. signal comes thru with maximum output.

Set the test oscillator at 1500 K.C., using the method previously outlined. Tune in the signal at approximately 50 meters, which is the 4th harmonic of 1500 K.C. and adjust trimmers Nos. 6 and 15 until the oscillator signal comes thru with maximum output. Retune the set and readjust trimmers 6 and 15. Trimmer No. 15 is not at all critical in its action.

NOTE: It is very important that the aligning frequencies given in sections 3, 4 and 5 be exact, otherwise both the calibration and sensitivity, particularly at the third short wave band, will be badly off.

* Mod 105 only.

(1) ALIGNING THE I. F. CIRCUITS AT 177.5 K. C.

Remove the grid clip from the first detector tube and connect the two output terminals of the oscillator in series with the grid clip and grid cap of the tube. Set the oscillator to exactly 177.5 K.C. and adjust its output to give about one-half scale deflection of the output meter.

Carefully adjust the four I.F. trimmers Nos. 1, 2, 3 and 4 (see diagram) until output is at a maximum. After all four trimmers have once been adjusted, go back and readjust them again in the same order, since any change made in one affects the others to some extent so that readjustment is necessary.

(2) ALIGNING BROADCAST R. F. CIRCUITS

In this, and all subsequent steps in alignment, remove the A.V.C. tube.

Before starting this alignment procedure, it is necessary to check the calibration of the set on the broadcast band, since this band must subsequently be used as a reference point in aligning the three short wave bands. This calibration check is very important. It can easily be done by disconnecting the test oscillator and tuning in some broadcast station between 1000 and 1400 K.C. whose frequency is definitely known. If the dial reading of the set corresponds to the broadcast frequency of the station, the set is in calibration. If the dial reading is incorrect, turn the dial pointer to the proper frequency and carefully adjust trimmer No. 8 until the station is tuned in with maximum volume.

After the receiver is calibrated it must be aligned. To do this connect the test oscillator to the set aerial and ground terminals and set it to approximately 1400 K.C. Tune the set to this signal. Carefully adjust trimmers No. 7 and No. 9 for maximum output. Retune the set, which is thrown out of resonance when trimmers No. 7 and No. 9 are adjusted, and once more adjust these trimmers. Repeat this procedure until you are certain the output cannot be increased by further adjustment.

(3) ALIGNING SHORT WAVE I. F. (AT 1540 Kc (1525 mod 105))

Adjust the test oscillator to exactly 1540 K.C. by setting the broadcast receiver to this frequency and tuning the oscillator until the signal comes thru with maximum volume. Now shift the tuning range of the set to the second short wave band (80 to 33 meters). Adjust the oscillator output to

There are five distinct circuits to be aligned in the 105 receiver. The order in which they are given below is the order in which they must be aligned.

- (1) Intermediate Frequency Amplifier (177.5 K.C.)
- (2) Broadcast Tuning Circuit (540-1550 K.C.)
- (3) Short Wave Intermediate Frequency Amplifier (1525 K.C.)
- (4) First Short Wave Circuit (180 to 80 meters)
- (5) Second Short Wave Circuit (80 to 33 meters)

NOTE: The third short wave circuit requires no aligning since both condensers will be in step if short wave circuits (4) and (5) are properly aligned.

In aligning the Model 105 it is essential to use a high grade oscillator and a sensitive output meter. The R.F. signal fed

into the receiver must be very weak or it will cause the A.V.C. circuit to function, making correct alignment impossible. The output meter must be sufficiently sensitive to give a satisfactory reading with this low signal.

Before starting the alignment of the set, see that the volume control and inter-station noise suppressor are full on, and the output meter connected to the pentode plates thru .25mfd. condensers, or to the voice coil of the speaker. The tone control should be turned all the way to the right. This last step is helpful in reducing the tube "shish" and makes aligning easier.

